

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US98/18679

A. CLASSIFICATION OF SUBJECT MATTER

IPC(6) :Please See Extra Sheet.

US CL :Please See Extra Sheet.

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

U.S. : 530/300, 324, 325, 326, 350; 424/184.1, 187.1, 188.1, 204.1, 208.1

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

Please See Extra Sheet.

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	US 5,336,603 A (CAPON et al) 09 August 1994, col. 6, lines 5-65.	1-18, 21-26
Y	SULLIVAN, N. et al. Effect of Amino Acid Changes in the V1/V2 Region of the Human Immunodeficiency Virus Type 1 gp120 Glycoprotein on Subunit Association, Syncytium Formation, and Recognition by a Neutralizing Antibody. J. Vir. June 1993, Vol. 67, No. 6, pages 3674-3679, especially abstract and pages 3676-3677.	1-18, 21-26

☒ Further documents are listed in the continuation of Box C. ☐ See patent family annex.

* Special categories of cited documents:	*T* later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
A document defining the general state of the art which is not considered to be of particular relevance	*X* document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
E earlier document published on or after the international filing date	*Y* document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
L document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)	*A* document member of the same patent family
O document referring to an oral disclosure, use, exhibition or other means	
P document published prior to the international filing date but later than the priority date claimed	

Date of the actual completion of the international search

04 DECEMBER 1998

Date of mailing of the international search report

08 FEB 1999

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International application No.

PCT/US98/18679

C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	MOORE, J.P. et al. Probing the Structure of the V2 Domain of Human Immunodeficiency Virus Type 1 Surface Glycoprotein with a panel of Eight Monoclonal Antibodies: Human Immune Response to the V1 and V2 Domains. J. Vir. October 1993, Vol. 67, No.10, pages 6136-6151, especially abstract and pages 6137-6138.	1-18, 21-26
Y	US 5,554,372 A (HUNTER et al) 10 September 1996, col. 25 and col. 4, lines 40-65.	21-26

Form PCT/ISA/210 (continuation of second sheet)(July 1992)*

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International application No.
PCT/US98/18679**Box I Observations where certain claims were found unsearchable (Continuation of item 1 of first sheet)**

This international report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. ☐ Claims Nos.:
because they relate to subject matter not required to be searched by this Authority, namely:
2. ☐ Claims Nos.:
because they relate to parts of the international application that do not comply with the prescribed requirements to such an extent that no meaningful international search can be carried out, specifically:
3. ☐ Claims Nos.:
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box II Observations where unity of invention is lacking (Continuation of item 2 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

Please See Extra Sheet.

1. ☐ As all required additional search fees were timely paid by the applicant, this international search report covers all searchable claims.
2. ☐ As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
3. ☐ As only some of the required additional search fees were timely paid by the applicant, this international search report covers only those claims for which fees were paid, specifically claims Nos.:
4. ☒ No required additional search fees were timely paid by the applicant. Consequently, this international search report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:
1-18 and 21-26

Remark on Protest

- ☐ The additional search fees were accompanied by the applicant's protest.
- ☐ No protest accompanied the payment of additional search fees.

A. CLASSIFICATION OF SUBJECT MATTER:
IPC (6):

A61K 38/00, 38/04, 39/00, 39/12, 39/38, 39/21; C07K 5/00, 7/00, 14/00, 16/00, 17/00

A. CLASSIFICATION OF SUBJECT MATTER:
US CL :

530/300, 324, 325, 326, 350; 424/184.1, 187.1, 188.1, 204.1, 208.1

B. FIELDS SEARCHED

Electronic data bases consulted (Name of data base and where practicable terms used):

APS, DIALOG, MEDLINE, EMBASE, SCISEARCH, BIOSIS, WPI
search terms: human immunodeficiency virus, HIV, HTLV, protein, peptide, polypeptide, V1, V2, V3, cd4, gp120, antibodies, clade

BOX II. OBSERVATIONS WHERE UNITY OF INVENTION WAS LACKING

This ISA found multiple inventions as follows:

This application contains the following inventions or groups of inventions which are not so linked as to form a single inventive concept under PCT Rule 13.1. In order for all inventions to be searched, the appropriate additional search fees must be paid.

Group I, claims 1-18 and 21-26, drawn to proteins and a method for stimulating antibodies.

Group II, claims 19 and 20, drawn to a monoclonal antibody.

Group III, claims 27-29, drawn to nucleic acids, vectors, and host cells.

Group IV, claims 30 and 31, drawn to a hybrid protein.

Group V, claim 32, drawn to a protein comprising a first and second portion.

The inventions listed as Groups I-V do not relate to a single inventive concept under PCT Rule 13.1 because, under PCT Rule 13.2, they lack the same or corresponding special technical features for the following reasons: Groups I-V recite different products which have different modes of action and different uses. The peptides of Group I can be used to produce antibodies, the antibodies of Group II can be used in assays, and the nucleic acids of Group III are to be used to produce peptides. Moreover, Groups I, IV, and V recite different peptides which have different structures and biological activities and are distinct each over the other. Therefore the inventions of Group I-V do not share a special technical feature. Accordingly, the claims are not so linked by a special technical feature within the meaning of PCT Rule 13.2 so as to form a single inventive concept.